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19318B MLRS MISSILE NUMBERS DK-001 DK-002 DK-003 ROUND
NUMBERS V-348/PW-2..(U) ARMY ELECTRONICS RESEARCH AND
DEVELOPMENT COMMAND WSMR NM ATM.. D C KELLER OCT 82

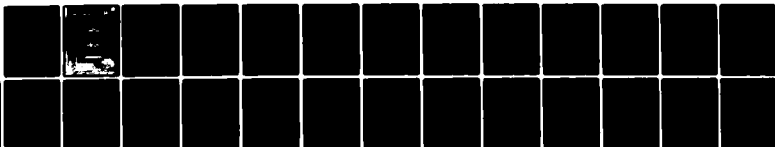
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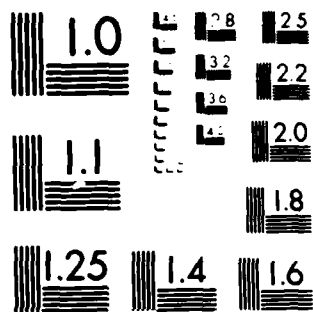
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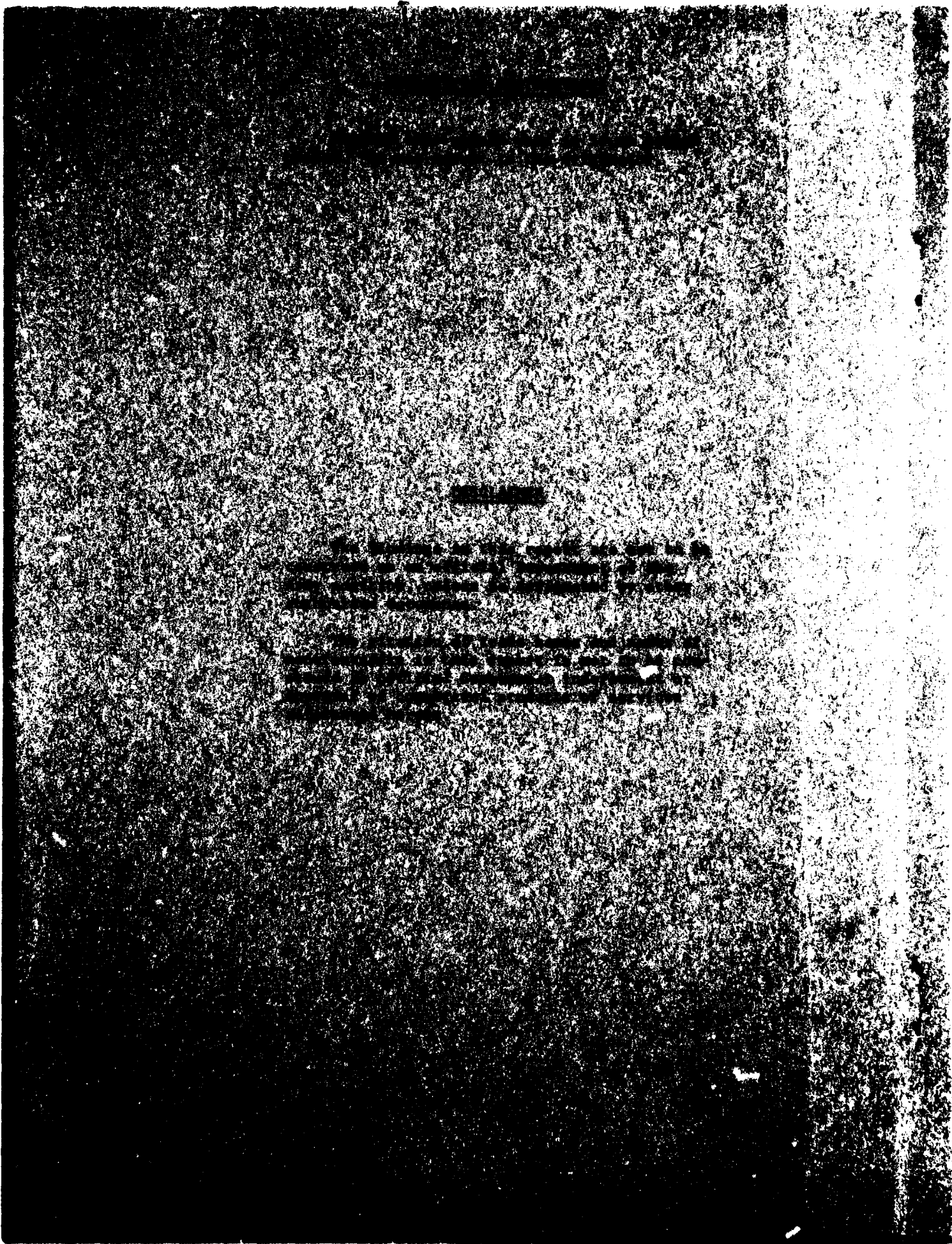


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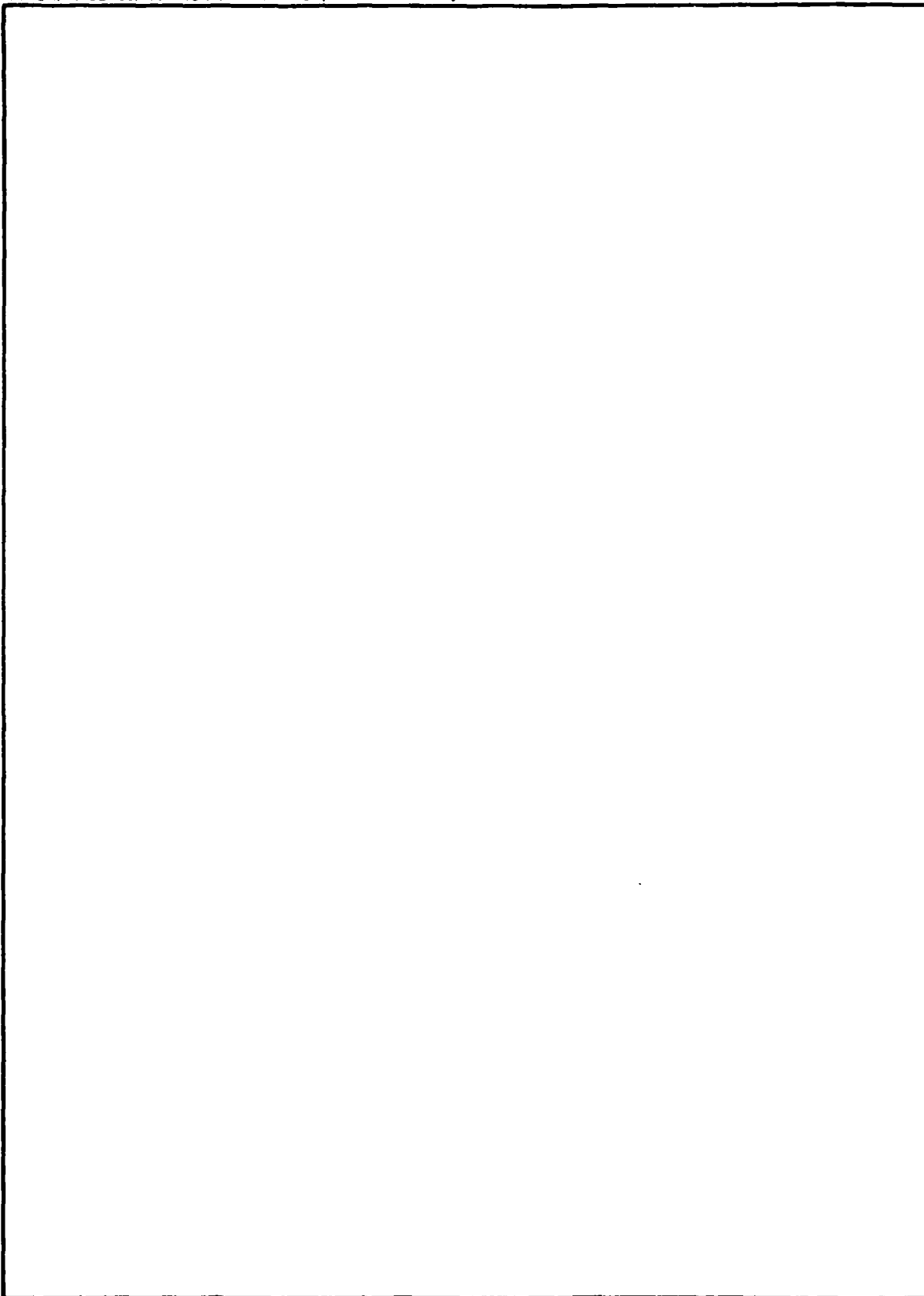
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19318B MLRS, Missile Numbers DK-001, DK-002, DK-003, Round Numbers V-348/PW-2, V-349/PW-3, V-350/PW-4 are presented in tabular form.		

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INTRODUCTION

193183 MLRS, Missile Numbers DK-001, DK-002 and DK-003. Round Numbers V-348/PW-2, V-349/PW-3 and V-350/PW-4, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0933:16, 0933:20 and 0933:25 MDT, 21 Oct 82. The scheduled launch times were 0930:00, 0930:04.5 and 0930:09 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from pilot-balloon observations at:

SITE AND ALTITUDE

WSD 2km

DOM 2km

(2) Air structure data (rawinsonde) were collected at the following Met Sites.

SITE AND TIME

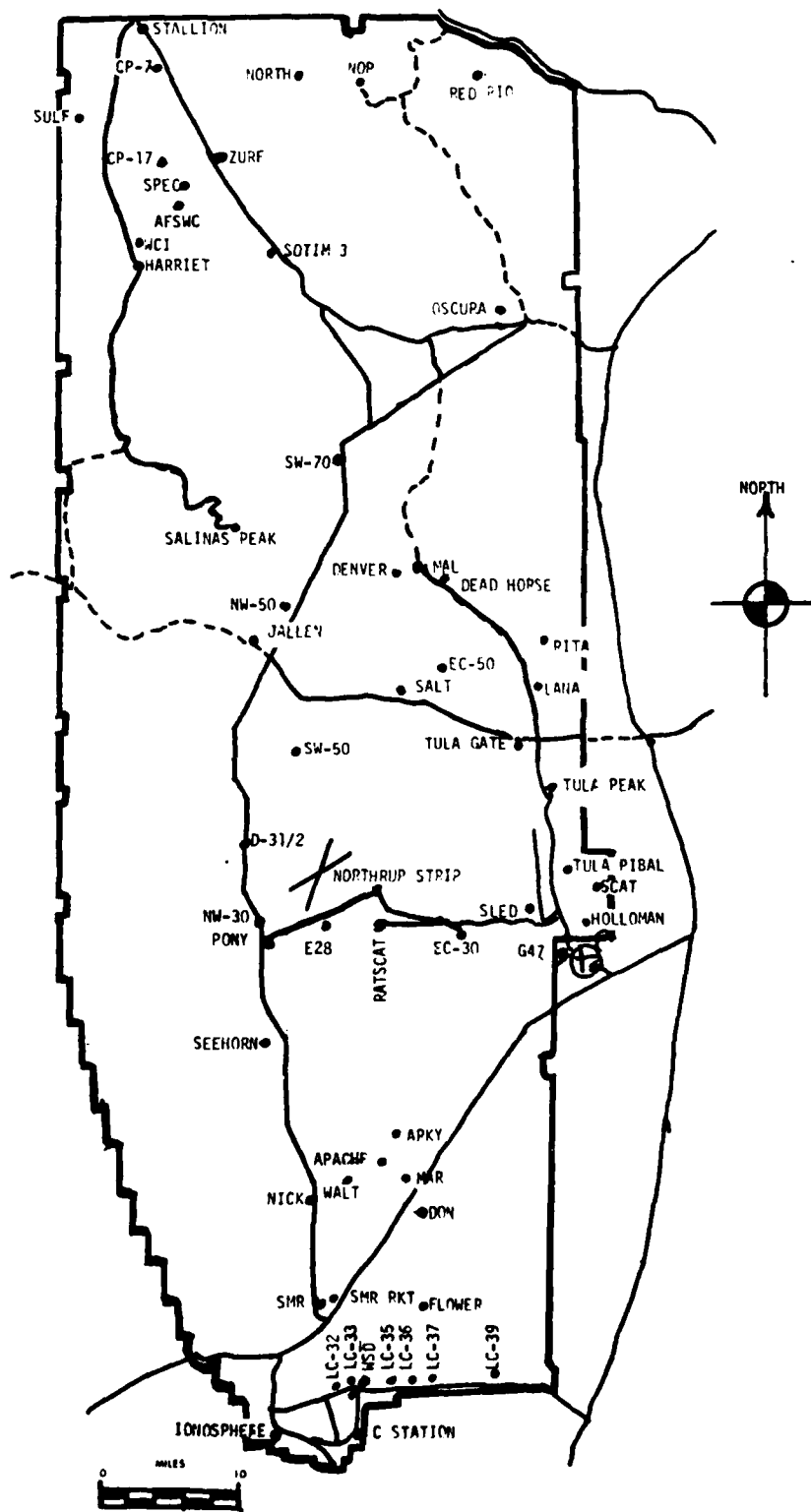
LC-37 0630 MDT

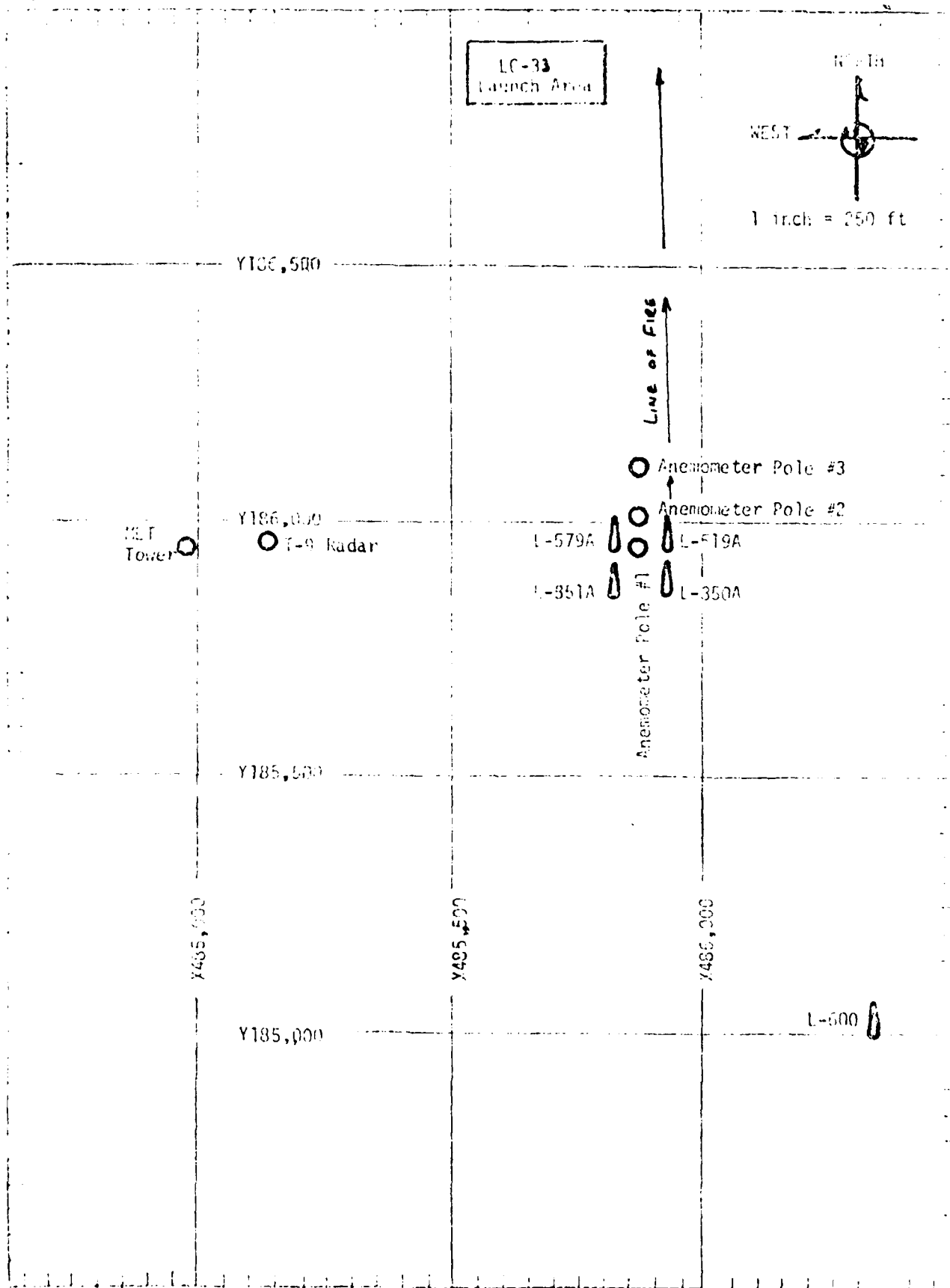
WSD 0730 MDT

LC-37 0830 MDT

WSD 0934 MDT

WSMR METEOROLOGICAL SITES





TABLE

2

TC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS

POLE #1			POLE #2			POLE #3		
X485,974.29			X485,974.29			X485,974.29		
Y185,958.90			Y186,012.00			Y186,116.00		
H4018.74			H4023.17			H4063.92		
53.7 ft. AGL			53.0 ft. AGL			53.0 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	042	05	T-30	020	03	T-30	019	05
T-20	037	05	T-20	020	04	T-20	018	05
T-10	035	05	T-10	012	04	T-10	015	05
T-0.0	031	05	T-0.0	011	04	T-0.0	013	05
T+10	024	06	T+10	003	03	T+10	009	06

TABLE

3

TC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET			LEVEL #2, 62 FEET		
X484,982.64, Y185,057.73, H3983.00 (base)			X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	030	04	T-30	026	04
T-20	037	04	T-20	026	03
T-10	031	03	T-10	012	03
T-0.0	023	03	T-0.0	013	04
T+10	011	04	T+10	012	03

LEVEL #3, 102 FEET			LEVEL #4, 102 FEET		
X484,982.64, Y185,057.73, H3983.00 (base)			X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	043	04	T-30	013	04
T-20	038	04	T-20	012	04
T-10	036	03	T-10	354	03
T-0.0	035	03	T-0.0	005	03
T+10	033	03	T+10	009	03

* POLE #1 DIRS. WERE ESTIMATED.

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 21 Oct 82

SITE: WSD
TIME: 0934 MDT
WSTM COORDINATES:
X= 488,852.29
Y= 184,982.45
H= 3,993.75

SITE: DOW
TIME: 0934 MDT
WSTM COORDINATES:
X= 511,988.37
Y= 247,396.36
H= 3,996.83

LAYER MIDPOINT	DIRECTION	SPEED
METERS AGL	DEGREES	KNOTS
SURFACE	335	04
150	332	02
210	359	05
270	353	05
330	355	04
390	012	06
500	030	04
650	035	03
800	302	06
950	295	06
1150	287	04
1350	318	02
1550	321	04
1750	277	04
2000	244	09

Data obtained from a NIKE-HERCULES
Radar Tracked pilot-balloon observation.

LAYER MIDPOINT	DIRECTION	SPEED
METERS AGL	DEGREES	KNOTS
SURFACE		CALM
150	346	04
210	349	05
270	354	04
330	001	04
390	011	04
500	037	04
650	007	02
800	303	04
950	286	04
1150	287	03
1350	322	04
1550	321	06
1750	272	07
2000	267	10

Data obtained from a Single-Theodolite
Tracked pilot-balloon observation.

TABLE 5

AIMING AND T-TIME COMPUTER MET MESSAGES
21 Oct 82

LC-37 0630 MDT	USD 0730 MDT
METCM1324063	METCM1324064
211250124882	211350122834
00000000 27860882	00053006 27720884
01061006 28260871	01026007 28110874
02040006 28420846	02040005 28380848
03573004 28450806	03590004 28460808
04507008 28400759	04494008 28420761
05510009 28020715	05503007 28040716
06470013 27600672	06465012 27620674
07435017 27190632	07492016 27280633
08515016 27080593	08518014 27140595
09544012 26700557	09539011 26710558
10540010 26290522	10543009 26300524
11553021 26030489	11548018 25990491
12546038 25600443	12553037 25560444

LC-37 0830 MDT	USD 0934 MDT
METCM1324063	METCM1324064
211450124883	211560122886
00000000 27990883	00631004 28350886
01620010 28170873	01010004 28350875
02023009 28420847	02017005 28460849
03505004 28500807	03537003 28480809
04512005 28430760	04551004 28410762
05502005 28060716	05538004 28000713
06467012 27650673	06464009 27590675
07493015 27290633	07502013 27330634
08513013 27180594	08540013 27150596
09550010 26800558	09539009 26700559
10520009 26410523	10518016 26410525
11545021 26170491	11552027 26140492
12554038 25720444	12563036 25660445

STATION ALTITUDE 4051.37 FEET MSL
21 OCT. 82
ASCENSION NO. 108

SIGNIFICANT LEVEL DATA
2940160108
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

TABLE 6

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
882.0	4.5	-1.5
879.0	7.2	-4.2
864.9	10.6	-2
850.0	10.6	-2.4
835.2	10.0	-3.0
800.4	10.8	-0
791.2	10.6	-8
769.4	11.3	-6.1
700.0	5.3	-8.9
661.9	1.1	-7.6
656.6	.9	-11.1
639.8	-8	-12.1
629.1	-2.4	-16.1
611.9	-2.4	-22.2
603.8	-1.5	-23.3
595.8	-2.1	-23.2
575.4	-4.0	-22.0
519.7	-11.0	-27.5
508.2	-11.4	-29.3
500.0	-12.0	-29.3
473.2	-14.3	-33.3
466.4	-14.3	-33.9
446.4	-16.4	-35.1
400.0	-23.6	-41.1
		65.0
		44.0
		47.0
		40.0
		40.0
		47.0
		45.0
		29.0
		35.0
		52.0
		40.0
		42.0
		34.0
		20.0
		17.0
		18.0
		23.0
		24.0
		21.0
		22.0
		18.0
		17.0
		18.0
		10.0

GEODETIC COORDINATES
32.40175 LAT DEG
106.31252 LON DEG

UPPER AIR DATA
2940180106
LC-37

STATION ALTITUDE 4051.37 FEET MSL
21 OCT. 82 0630 MDT
ASCENSION NO. 108

TABLE 7

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE WETPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION EGRESS(TN)	SPEED KNOTS	INDEX OF REFRACTION
4051.4	882.0	4.5	-1.5	65.0	1104.0	649.9	0	0	1.000273
4500.0	867.5	10.0	-1.0	46.4	1064.8	650.3	308.8	.7	1.000264
5000.0	851.8	10.6	-2.1	40.9	1013.4	657.0	308.8	1.6	1.000257
5500.0	836.4	10.0	-2.9	40.0	1026.5	650.3	308.8	2.4	1.000252
6000.0	821.2	10.3	-1.8	42.8	1000.7	650.7	308.8	3.2	1.000250
6500.0	806.3	10.7	-.5	45.8	987.0	657.2	308.8	4.1	1.000248
7000.0	791.7	10.6	-.8	45.1	969.3	657.2	296.8	5.1	1.000243
7500.0	777.4	11.0	-3.8	34.9	950.8	657.5	288.9	6.3	1.000233
8000.0	763.3	10.8	-6.3	29.5	934.7	657.1	287.7	7.0	1.000226
8500.0	749.4	9.6	-6.8	30.7	921.5	655.7	291.4	7.3	1.000223
9000.0	735.7	8.5	-7.3	31.8	908.4	654.3	293.9	7.7	1.000219
9500.0	722.3	7.3	-7.9	33.0	895.6	653.0	284.0	8.5	1.000216
10000.0	709.1	6.1	-8.5	34.2	883.0	651.6	277.1	9.5	1.000212
10500.0	696.0	4.9	-8.7	36.7	870.0	650.1	272.3	11.0	1.000210
11000.0	683.1	3.5	-8.1	42.4	858.7	648.5	269.3	12.9	1.000208
11500.0	670.4	2.1	-7.7	48.1	847.0	640.9	267.3	14.7	1.000206
12000.0	657.9	.9	-10.2	43.0	834.8	645.5	269.3	15.4	1.000200
12500.0	645.5	-.2	-11.7	41.3	822.8	644.1	271.2	16.1	1.000196
13000.0	633.4	-1.8	-14.4	37.2	812.0	642.2	273.8	16.5	1.000191
13500.0	621.4	-2.4	-18.5	27.7	798.8	641.3	277.9	16.2	1.000185
14000.0	609.6	-2.1	-22.5	19.1	783.1	641.5	282.2	16.0	1.000180
14500.0	598.0	-1.9	-23.2	17.7	767.7	641.8	287.4	15.2	1.000176
15000.0	586.6	-2.9	-22.6	20.2	755.9	640.6	293.6	14.3	1.000174
15500.0	575.5	-4.0	-22.0	23.0	744.3	639.4	299.8	13.5	1.000171
16000.0	564.3	-5.3	-23.1	23.2	733.6	637.8	301.4	12.4	1.000168
16500.0	553.4	-6.7	-24.1	23.4	723.1	636.1	303.4	11.2	1.000166
17000.0	542.7	-8.0	-25.2	23.6	712.7	634.5	304.5	11.0	1.000163
17500.0	532.2	-9.4	-26.2	23.8	702.5	632.9	305.0	11.3	1.000160
18000.0	521.9	-10.7	-27.3	24.0	692.5	631.3	305.5	11.5	1.000158
18500.0	511.7	-11.3	-28.7	21.9	680.5	630.6	308.0	14.5	1.000155
19000.0	501.7	-11.9	-29.3	21.8	668.6	629.8	309.7	17.8	1.000152
19500.0	491.8	-12.7	-30.5	20.8	657.5	628.8	310.9	21.2	1.000149
20000.0	482.1	-13.5	-31.9	19.3	646.6	627.8	309.9	25.2	1.000146
20500.0	472.5	-14.3	-33.4	17.9	635.8	626.9	309.2	29.2	1.000144
21000.0	463.1	-14.6	-34.1	17.2	623.9	626.5	308.6	33.0	1.000141
21500.0	453.9	-15.6	-34.6	17.6	613.8	625.3	307.7	34.9	1.000139
22000.0	444.8	-16.6	-35.3	18.0	604.0	624.0	307.0	36.8	1.000136
22500.0	435.8	-18.0	-36.4	18.0	594.8	622.4			1.000134
23000.0	427.0	-19.3	-37.5	18.0	585.9	620.7			1.000132
23500.0	418.3	-20.7	-39.7	18.0	577.1	619.1			1.000130

STATION ALTITUDE 4051.37 FEET MSL
 21 OCT. 82
 ASCENSION NO. 108

UPPER AIR DATA
 2940180103
 LC-37
 TABLE 7 Cont'd

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
		AIR	DEWPOINT			KNOTS	FEET			
24000.0	409.8	-22.0	-39.8	18.0	568.4	617.4				1.000128
24500.0	401.5	-23.4	-40.9	18.0	559.9	615.8				1.000126

STATION ALTITUDE 4051.37 FEET MSL
21 OCT. 82 0630 MDT
ASCENSION NO. 108

MANDATORY LEVELS
2940100108
LC-37
TABLE 8

GEOGETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5054.	10.6	-2.4	40.		305.8	1.7
800.0	6710.	10.8	-1.1	47.		303.1	4.5
750.0	8475.	9.7	-6.8	31.		291.2	7.3
700.0	10339.	5.3	-8.9	35.		273.4	10.5
650.0	12306.	.2	-11.5	41.		270.5	15.9
600.0	14396.	-1.8	-23.2	17.		286.3	15.4
550.0	16646.	-7.1	-24.4	23.		304.1	10.9
500.0	19057.	-12.0	-29.3	22.		309.9	18.3
450.0	21682.	-16.0	-34.9	18.		307.4	35.7
400.0	24551.	-23.6	-41.1	18.			

STATION ALTITUDE 3989.00 FEET MSL
21 OCT. 82
ASCENSION NO. 511

SIGNIFICANT LEVEL DATA
2940020511
WHITE SANDS
TABLE 9

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT
884.2	3989.0	3.4	67.0
875.5	4254.8	8.0	47.0
850.0	5059.0	10.1	46.0
793.0	6957.9	10.8	46.0
772.8	7665.6	11.6	30.0
700.0	10351.6	5.3	34.0
668.9	11564.2	1.9	48.0
641.7	12659.8	-7	35.0
624.3	13380.8	-1.2	16.0
615.5	13753.3	-2	19.0
590.1	14857.3	-2.3	21.0
525.2	17851.8	-10.5	21.0
517.4	18230.4	-10.6	20.0
500.0	19093.0	-12.3	20.0
479.8	20125.2	-14.5	17.0
458.0	21281.2	-15.8	16.0
421.8	23305.4	-20.3	16.0
400.0	24591.1	-23.3	23.0
388.7	25279.4	-24.6	23.0
		-39.7	

STATION ALTITUDE 3989.00 FEET MSL
21 OCT. 82 0730 MDT
ASCENSION NO. 511

UPPER AIR DATA
2940020511
WHITE SANDS
TABLE 10

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	884.2	3.4	67.0	1111.3	648.6	30.0	6.0	1.000273
4000.0	883.8	3.6	66.2	1110.1	648.8	29.8	6.0	1.000273
4500.0	867.6	8.6	46.7	1070.2	654.7	21.5	5.1	1.000263
5000.0	851.8	9.9	46.1	1045.6	656.3	9.9	4.3	1.000260
5500.0	826.4	10.3	46.0	1025.4	658.7	354.3	3.8	1.000256
6000.0	821.3	10.4	46.0	1006.1	658.9	335.6	3.6	1.000252
6500.0	806.4	10.6	46.0	987.2	657.2	317.2	3.9	1.000248
7000.0	791.8	10.8	45.0	968.5	657.4	301.3	4.6	1.000243
7500.0	777.5	11.4	33.7	949.7	657.9	290.0	5.7	1.000233
8000.0	763.3	10.8	30.5	934.6	657.1	262.7	7.0	1.000227
8500.0	749.4	9.6	31.2	921.4	655.8	280.3	7.2	1.000223
9000.0	735.7	8.5	32.0	908.4	654.4	278.5	7.3	1.000219
9500.0	722.3	7.3	32.7	895.7	653.0	276.3	7.4	1.000216
10000.0	709.1	6.1	33.5	883.1	651.6	272.7	8.5	1.000212
10500.0	696.1	4.9	35.7	870.7	650.1	269.9	9.6	1.000209
11000.0	683.2	3.5	41.5	858.8	648.5	269.0	10.9	1.000207
11500.0	670.5	2.1	47.3	847.1	646.9	270.1	12.6	1.000206
12000.0	657.9	.9	42.8	835.1	645.4	271.0	14.3	1.000200
12500.0	645.6	-3.3	36.9	823.3	643.9	273.3	15.2	1.000195
13000.0	633.4	-9.9	26.0	809.9	643.0	276.7	15.6	1.000188
13500.0	621.5	-9.9	16.0	794.7	643.0	279.9	16.1	1.000182
14000.0	609.7	-7.7	17.1	779.1	643.3	283.2	15.2	1.000179
14500.0	598.2	-1.6	19.4	767.0	642.2	287.1	14.2	1.000176
15000.0	586.8	-2.7	21.0	755.4	640.9	291.6	13.2	1.000174
15500.0	575.5	-4.1	21.0	744.6	639.3	294.8	11.9	1.000171
16000.0	564.4	-5.4	21.0	734.0	637.6	298.9	10.7	1.000168
16500.0	553.6	-6.8	21.0	723.6	636.0	303.3	9.6	1.000165
17000.0	542.9	-8.2	21.0	713.4	634.3	304.2	9.5	1.000163
17500.0	532.4	-9.5	21.0	703.3	632.7	305.0	9.4	1.000160
18000.0	522.1	-10.5	20.6	692.4	631.5	306.3	9.9	1.000157
18500.0	511.9	-11.1	20.0	680.3	630.7	308.0	12.4	1.000154
19000.0	501.8	-12.1	20.0	669.5	629.5	309.1	15.0	1.000152
19500.0	491.9	-13.2	18.8	659.0	628.3	310.1	18.1	1.000149
20000.0	482.2	-14.2	17.4	648.6	627.0	311.2	22.7	1.000146
20500.0	472.6	-14.9	16.7	637.4	626.1	312.0	27.2	1.000144
21000.0	463.2	-15.5	16.2	626.1	625.4	312.0	31.2	1.000141
21500.0	453.9	-16.3	16.0	615.5	624.4	311.3	34.1	1.000139
22000.0	444.8	-17.4	16.0	605.7	623.1	310.6	37.1	1.000136
22500.0	435.8	-18.5	16.0	596.2	621.7	310.8	39.2	1.000134
23000.0	427.1	-19.6	16.0	586.7	620.4	311.6	40.3	1.000132

STATION ALTITUDE 3989.00 FEET MSL	UPPER AIR DATA	GEODETIC COORDINATES
21 OCT. 62	2940020511	32.40043 LAT DEG
ASCENSION NO. 511	WHITE SANDS	106.37033 LON DEG
	TABLE 10 Cont'd	

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES (TN)	SPEED KNOTS	
23500.0	418.4	-20.8	-39.3	17.1	577.4	619.0	312.8	41.4	1.000130
24000.0	409.9	-21.9	-38.8	19.8	568.2	617.5			1.000128
24500.0	401.5	-23.1	-38.6	22.5	559.2	616.1			1.000126
25000.0	393.2	-24.1	-39.2	23.0	549.9	614.9			1.000124

STATION ALTITUDE 3989.00 FEET MSL
21 OCT. 82
ASCENSION NO. 511

MANDATORY LEVELS
2940020511
WHITE SANDS
TABLE 11

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	5055.	10.1	-1.0	46.	6.3	4.2	
800.0	6712.	10.7	-4	46.	310.3	4.1	
750.0	8477.	9.7	-6.5	31.	280.3	7.2	
700.0	10341.	5.3	-9.3	34.	270.7	9.2	
650.0	12308.	.1	-12.2	39.	272.0	15.0	
600.0	14405.	-1.5	-22.0	19.	286.4	14.3	
550.0	16655.	-7.3	-25.8	21.	303.6	9.6	
500.0	19066.	-12.3	-30.6	20.	309.2	15.4	
450.0	21684.	-16.8	-36.6	16.	311.0	35.4	
400.0	24550.	-23.3	-38.6	23.			

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

SIGNIFICANT LEVEL DATA
2940160109
LC-37

TABLE 12

STATION ALTITUDE 4051.37 FEET MSL
21 OCT. 82
ASCENSION NO. 109 0830 MDT

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
883.3	4051.4	6.0	51.0
868.1	4520.9	9.0	41.0
850.2	5088.7	10.1	39.0
839.4	5438.5	11.2	41.0
808.2	6476.3	10.6	47.0
777.6	7535.1	12.1	24.0
700.0	10392.5	5.6	30.0
670.4	11547.3	2.6	45.0
663.2	11833.9	1.6	39.0
645.4	12552.6	.2	39.0
636.6	12913.6	-.9	27.0
628.0	13270.1	-1.3	16.0
611.5	13968.5	-.3	15.0
585.5	15106.9	-2.1	19.0
529.1	17719.3	-8.8	18.0
499.8	19164.6	-10.9	14.0
470.1	20706.5	-13.0	15.0
399.7	24705.3	-21.8	23.0
		-37.3	

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

UPPER AIR DATA
2940180109
LC-37

TABLE 13

STATION ALTITUDE 4051.37 FEET MSL
21 OCT. 82
ASCENSION NO. 109 0830 MDT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE / MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	883.3	6.0	-3.4	51.0	1100.1	651.6	.0	.0	1.000268
4500.0	868.8	8.9	-3.5	41.4	1071.0	654.9	311.6	.8	1.000261
5000.0	853.0	9.9	-3.3	39.3	1047.5	656.2	311.6	1.7	1.000256
5500.0	837.5	11.2	-1.5	41.4	1023.7	657.7	311.6	2.6	1.000254
6000.0	822.4	10.9	-8	44.2	1006.0	657.4	311.6	3.5	1.000251
6500.0	807.5	10.6	-3	46.5	988.5	657.2	311.6	4.3	1.000248
7000.0	792.9	11.3	-3.3	35.6	960.7	657.8	297.4	5.1	1.000238
7500.0	778.6	12.1	-7.5	24.8	949.4	658.5	285.9	6.1	1.000228
8000.0	764.4	11.0	-4.2	25.0	935.5	657.3	283.2	6.2	1.000214
8500.0	750.5	9.9	-8.7	26.0	922.2	656.0	288.2	5.1	1.000220
9000.0	736.8	8.8	-9.1	27.1	909.0	654.6	294.2	4.2	1.000217
9500.0	723.4	7.6	-9.6	28.1	896.1	653.3	280.6	5.0	1.000214
10000.0	710.2	6.5	-10.2	29.2	883.4	652.0	271.2	6.0	1.000210
10500.0	697.2	5.3	-10.3	31.4	870.9	650.6	266.8	7.6	1.000208
11000.0	684.3	4.0	-9.0	37.9	856.6	649.1	265.9	9.7	1.000207
11500.0	671.6	2.7	-8.2	44.4	846.5	647.7	265.4	11.9	1.000205
12000.0	659.0	1.3	-11.1	39.0	835.4	645.9	269.9	12.7	1.000199
12500.0	646.7	.3	-12.0	39.0	822.7	644.7	274.3	13.5	1.000196
13000.0	634.5	-1.0	-18.8	24.3	811.5	643.0	278.0	14.0	1.000188
13500.0	622.5	-1.0	-23.8	15.7	796.3	642.9	261.3	13.6	1.000182
14000.0	610.8	-3.3	-23.7	15.1	779.5	643.6	284.8	13.2	1.000178
14500.0	599.2	-1.1	-23.1	16.9	767.0	642.7	288.5	12.6	1.000176
15000.0	587.9	-1.9	-22.7	18.6	754.6	641.8	292.5	11.9	1.000173
15500.0	576.6	-3.1	-23.5	18.8	743.5	640.4	297.0	11.2	1.000170
16000.0	565.6	-4.4	-24.7	18.7	732.7	638.8	296.5	10.5	1.000168
16500.0	554.7	-5.7	-25.9	18.5	722.1	637.3	299.8	9.9	1.000165
17000.0	544.1	-7.0	-27.0	18.3	711.7	635.8	302.3	9.2	1.000162
17500.0	533.6	-8.2	-28.2	18.1	701.4	634.2	348.2	13.0	1.000159
18000.0	523.3	-9.2	-29.5	17.2	690.4	633.0	8.9	20.7	1.000157
18500.0	513.1	-9.9	-31.0	15.0	678.8	632.2	9.1	25.5	1.000154
19000.0	503.1	-10.7	-32.6	14.5	667.4	631.3	345.9	21.3	1.000151
19500.0	493.2	-11.4	-33.3	14.2	656.1	630.4	318.0	21.6	1.000148
20000.0	483.5	-12.0	-33.6	14.5	644.9	629.6	295.4	26.2	1.000146
20500.0	474.0	-12.7	-34.0	14.9	633.8	628.8	280.9	33.5	1.000143
21000.0	464.5	-13.6	-34.2	15.6	623.4	627.7	271.9	42.2	1.000141
21500.0	455.2	-14.7	-34.5	16.6	613.5	626.3	282.6	39.6	1.000138
22000.0	446.1	-15.8	-34.9	17.6	603.8	625.0	297.5	37.8	1.000136
22500.0	437.1	-16.9	-35.2	18.6	594.2	623.7			1.000134
23000.0	428.3	-18.0	-35.6	19.6	584.8	622.3			1.000132
23500.0	419.7	-19.1	-36.1	20.6	575.5	621.0			1.000130

STATION ALTITUDE 4051.37 FEET MSL	UPPER AIR DATA	GEODETIC COORDINATES
21 OCT. 82	2940160109	32.40175 LAT DEG
ASCENSION NO. 109	LC-37	106.31232 LONG DEG
	TABLE 13 Cont'd	

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (DEGREES TN)	SPEED KNOTS	INDEX OF REFRACTION
24000.0	411.3	-20.2	21.6	566.4	619.6			1.000128
24500.0	403.0	-21.3	22.6	557.5	610.3			1.000126

STATION ALTITUDE 4051.37 FEET MSL
21 OCT. 82 0830 HDT
ASCENSION NO. 109

MANDATORY LEVELS
2940180104
LC-37
TABLE 14

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	5091.	10.1	-3.2	39.	311.0	1.8
800.0	6750.	11.0	-1.0	41.	304.7	4.7
750.0	8517.	9.9	-8.7	20.	280.4	5.1
700.0	10382.	5.6	-10.6	30.	267.1	7.1
650.0	12352.	.6	-11.8	39.	273.1	13.3
600.0	14450.	-1.1	-23.1	17.	288.2	14.7
550.0	16706.	-6.2	-26.4	13.	300.5	9.6
500.0	19127.	-10.9	-33.0	14.	337.8	20.8
450.0	21763.	-15.4	-34.7	17.	290.9	38.3
400.0	24646.	-21.8	-37.2	23.		

STATION ALTITUDE 3989.00 FEET MSL
21 OCT. 82 0934 EDT
ASCENSION NO. 512

SIGNIFICANT LEVEL DATA
294.0020512
WHITE SANDS
TABLE 15

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
885.6	3989.0	9.5	1.4	57.0
875.7	4295.0	8.7	-2.0	47.0
868.9	4507.6	10.7	-1.4	43.0
850.0	5109.6	10.8	-1.6	42.0
814.8	6266.3	10.1	-1.6	44.0
805.3	6587.1	10.8	-1.3	43.0
791.6	7058.4	12.5	-4.1	31.0
776.5	7588.1	11.8	-7.1	26.0
700.0	10400.8	4.6	-9.5	35.0
674.9	11374.4	2.2	-8.5	45.0
657.6	12061.6	.4	-10.7	43.0
639.7	12788.0	-.4	-20.6	20.0
613.6	13833.8	.2	-20.1	20.0
554.0	16539.0	-7.1	-24.2	24.0
513.3	18484.4	-10.0	-30.3	17.0
500.0	19147.9	-11.7	-31.8	17.0
494.3	19436.8	-11.5	-32.2	16.0
474.1	20485.6	-13.1	-33.5	16.0
420.3	23464.9	-19.9	-34.0	27.0
400.0	24665.3	-23.3	-37.0	27.0

GEOMETRIC COORDINATES
32.40043 LAT DEG
106.57033 LONG DEG

UPPER AIR DATA
2940020512
WHITE SANDS
TABLE 1C

STATION ALTITUDE 3989.00 FEET MSL
21 OCT. 82
ASCENSION NO. 512

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KIOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KIOTS	INDEX OF REFRACTION
3989.0	885.6	9.5	57.0	1098.3	655.9	355.0	4.1	1.000275
4000.0	885.2	9.5	56.6	1098.0	655.9	355.2	4.1	1.000274
4500.0	869.1	10.6	43.1	1064.4	657.1	1.8	4.4	1.000263
5000.0	853.4	10.8	42.7	1044.5	657.2	7.4	4.9	1.000258
5500.0	838.0	10.6	42.7	1026.4	657.0	21.7	4.1	1.000254
6000.0	822.8	10.3	43.5	1008.6	656.7	26.7	2.9	1.000250
6500.0	807.9	10.6	43.3	989.2	657.1	323.0	3.8	1.000246
7000.0	793.3	12.3	32.5	960.0	658.9	302.5	6.0	1.000237
7500.0	779.0	11.2	26.8	950.2	658.4	301.5	5.1	1.000229
8000.0	764.8	10.7	27.3	936.8	657.0	312.8	4.6	1.000225
8500.0	750.8	9.5	28.9	923.9	655.5	324.5	4.2	1.000222
9000.0	737.1	8.2	30.5	911.2	656.0	350.8	3.5	1.000219
9500.0	723.6	6.9	32.1	898.6	655.5	318.0	3.2	1.000216
10000.0	710.4	5.6	33.7	886.3	651.0	282.1	4.0	1.000212
10500.0	697.4	4.4	36.0	874.1	649.5	258.3	6.3	1.000210
11000.0	684.4	3.1	41.2	861.5	648.1	253.6	8.4	1.000208
11500.0	671.7	1.9	44.6	849.3	646.6	261.9	9.8	1.000205
12000.0	659.1	.6	43.2	837.6	645.0	272.1	11.7	1.000200
12500.0	646.7	-.1	29.1	824.2	644.1	279.4	13.1	1.000193
13000.0	634.6	-.3	20.0	809.6	643.8	279.8	13.1	1.000186
13500.0	622.6	-.0	20.2	793.5	644.1	286.9	12.9	1.000183
14000.0	610.9	-.1	20.2	778.8	644.0	298.5	12.9	1.000180
14500.0	599.2	-1.5	20.9	767.9	642.3	303.3	12.8	1.000177
15000.0	587.8	-2.9	21.7	757.1	640.7	305.5	12.4	1.000174
15500.0	576.6	-4.2	22.4	746.5	639.1	306.8	11.5	1.000172
16000.0	565.6	-5.6	23.2	736.1	637.4	308.2	9.9	1.000169
16500.0	554.8	-7.0	23.9	725.8	635.8	301.7	8.5	1.000166
17000.0	544.1	-7.8	22.3	713.9	634.8	295.8	9.3	1.000163
17500.0	533.5	-8.5	20.5	702.0	633.9	289.6	11.6	1.000160
18000.0	523.1	-9.3	18.7	690.4	633.0	289.3	15.5	1.000157
18500.0	513.0	-10.0	17.0	679.0	632.0	296.4	19.9	1.000154
19000.0	502.9	-11.3	17.0	668.9	630.5	306.4	24.2	1.000151
19500.0	493.1	-11.6	16.0	658.5	630.1	311.5	28.2	1.000148
20000.0	483.3	-12.4	16.0	645.5	629.2	313.2	31.4	1.000146
20500.0	473.8	-13.1	16.1	634.8	628.3	313.3	33.4	1.000143
21000.0	464.3	-14.3	17.9	624.7	626.9	314.2	34.3	1.000141
21500.0	455.0	-15.4	19.7	614.9	625.5	314.8	35.6	1.000139
22000.0	445.9	-16.6	21.6	605.3	624.1	316.0	37.0	1.000137
22500.0	437.0	-17.7	23.4	595.8	622.8	317.6	37.6	1.000135
23000.0	428.3	-18.8	25.3	586.5	621.4	319.3	37.1	1.000133

STATION ALTITUDE 3989.00 FEET MSL
21 OCT. 82 0734 MDT
ASCENSION NO. 512

UPPER AIR DATA
2940020JLZ
WHITE SANDS
TABLE 16 Cont'd

GEODETTIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (DEGREES(TN))	SPEED KNOTS	INDEX OF REFRACTION
23500.0	419.7	-20.0	-34.1	27.0	577.4	619.9			1.000131
24000.0	411.1	-21.4	-35.3	27.0	560.8	618.2			1.000128
24500.0	402.7	-22.8	-36.6	27.0	560.3	616.4			1.000126

STATION ALTITUDE 3989.00 FEET MSL
 21 OCT. 82 0934 MOT
 ASCENSION NO. 512

MANDATORY LEVELS
 2940020512
 WHITE SANDS
 TABLE 17

GEODEIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	5106.	10.8	-1.6	42.	8.5	4.9
800.0	6763.	11.5	-2.2	38.	309.5	5.0
750.0	8530.	9.4	-7.7	29.	325.3	4.1
700.0	10390.	4.6	-9.5	35.	261.0	5.8
650.0	12354.	.1	-14.1	33.	278.0	12.8
600.0	14455.	-1.4	-20.9	21.	303.1	12.8
550.0	16703.	-7.4	-24.7	23.	299.0	8.8
500.0	19121.	-11.7	-31.0	17.	308.9	25.5
450.0	21752.	-16.0	-33.4	21.	315.3	36.4
400.0	24624.	-23.3	-37.0	27.		

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